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Results of a number of studies of correlations between achievement in Reading and Study Skills Laboratory (RSSL) work at the University of Maryland and both academic achievement and personality variables are presented. Findings of early studies suggested that better students tended to stay in RSSL programs; whereas, later studies showed the opposite. It is suggested that this change might be due to differences in data collection or to a change in students: poorer students may be becoming more cognizant of their difficulties and are, consequently, more motivated to work on them. Implications are that college reading specialists must consider assumptions about students carefully, gathering data which will assess changes in student characteristics and attitudes frequently enough to make necessary program revisions to meet student needs. References are included. (MD)

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# PREDICTING PERSISTENCE IN A VOLUNTARY COLLEGE READING PROGRAM[1]

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Academic drop-outs concern today's educators at all levels. College students who enter special programs designed to help them improve their reading and study skills, but who do not continue, pose a frequent and continuing problem for the college reading specialist.

For many years in our University of Maryland Reading and Study Skills Laboratory we have been intrigued with factors contributing to attrition in a voluntary college reading laboratory. Over the years, we have explored the relationship between drop-outs and such variables as personality characteristics, nature of the hours of scheduling services provided, characteristics of the instructor and length of class period, etc. Typically, the results have been rather inconclusive. In one early study, we found a significant relationship between the number of group sessions attended and mean gains in reading rate on post-tests--suggesting that either the students who were making progress tended to remain longer in the program, while those failing to make progress dropped out or, conversely, improvement in reading speed depends on the number of hours spent in the program. This finding supports Wood's contention that persistence in a voluntary reading program is a useful criterion for assessing its value to students (Wood, 1961).

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In a study of students who dropped out of the RSSLab. in 1962-3, we compared initial test profiles, for a sample of 289 undergraduates, with

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the number of hours students remained in the program. Subjects were divided into three groups by analyzing their percentile scores on 5 pre-tests as follows:

High group: students scoring at the 80th percentile on college freshmen norms on one or more tests (with no scores below the 20th percentile).

Average group: students scoring between the 20th and 79th percentiles on all tests.

Low group: students scoring below the 20th percentile on one or more tests with no scores above the 79th percentile.

As Table 1 shows, there was a definite tendency for students with high initial profiles to persist longer in the program.

Table 1

Relation between Initial Test Profiles and Attendance in the Reading and Study Skills Laboratory

| Test Profile | N | Range of Hours Attended | Hours Attended Mean | Hours Attended Median |
|---|---|---|---|---|
| High | 148 | 1-32 | 9.22 | 11.0 |
| Average | 49 | 1-33 | 7.63 | 5.0 |
| Low | 92 | 1-32 | 6.79 | 4.0 |

Racamato (1965) interviewed 14 students who had dropped out of the RSSLab. in 1964 and found that 43% of this group stated that they were discouraged by the test interpretation interview when they found that they had low initial test scores. He judged 36% of the drop-outs as having "low frustration" tolerance, and 29% as being habitual "drop-outs" in activities that they entered. Other causes were specific to given individuals. As a result of these findings, we instituted a new policy the following year of not interpreting test scores to students showing

low profiles unless they specifically requested it. Attendance records of students who did not have their low profiles interpreted were compared with attendance figures for students from the preceding year with equally low profiles, but who had tests results interpreted. There were no significant differences between the mean hours attended, indicating that it is not the overt knowledge of his low test profile that concerns the student but that the concommitent characteristics that underlie poor test profiles also mitigate against persistence in a voluntary reading laboratory. For example, the very slow reader can often ill afford to spend the time improving his reading rate regardless of how low it is without sacrificing precious time from his already hopeless study schedule.

Darby (1966) looked at RSSLab. attendance as a function of whether the student was referred to the program by an instructor or administrator or whether his entering the RSSLab. was self-initiated. He found that self-referred students averaged more hours per week in the program (i.e., worked more intensively) but attended approximately the same number of weeks as those students who were referred by administrators or faculty members. He found no significant differences between the mean scores of self-initiated and referred students on the pre-test battery.

In a larger, subsequent study, the RSSLab. attendance was analyzed for 391 male applicants to the University of Maryland who had been admitted provisionally to a special summer program (PCSS) because of their low high school records. These students were required to pass an eight-weeks academic program including freshman English and were offered the RSSLab. and special counseling services on a voluntary basis. Seventeen cognitive and personality pre-test variables were correlated with

the number of hours they spent in the RSSLab. including:

a. Personality Scores on four of the California Psychological Inventory (CPI) scales: Achievement via Independence (Ai), Socialization (So), and Responsibility (Re). These particular scales were selected since previous studies had shown them to be good predicters of college graduation (Maxwell, 1960) and of success in the summer program (Millar, 1964).

b. Three Scholastic Aptitudes Scores on the American College Testing (ACT) Battery: English, Social Studies and Cumulative.

c. Reading and Study Skills Scores: Nelson-Denny Reading Test, Form A - Vocabulary, Comprehension, Total Rate of Reading; Wrenn Study Habits Inventory (Scheduling, Reading, Study Habits, Concentration); The U. of Md. RSSL Diagnostic Spelling Test (a dictated test of 100 words) and the Knower-Goyer Test of Organizational Skills.

As Tables 2 and 3 show, the PCSS average group scores are considerably lower than regularly admitted U. of Md. freshmen on all tests.

Results:

Attendance in the RSSLab. correlated .00 with English grades and .08 with the pass-fail criterion. (Note: English grades correlated .68 with pass-fail.)

The mean hours students spent in the RSSLab. was 6.5 (S.D. - 4.26), although students were scheduled for a total of 32 hours. The distribution of hours spent in the program was skewed since a number did not choose to attend the RSSLab. at all, but were included in the study. Although the 1964 PCSS population did not appear to be different from

Table 2

Comparison of A.C.T. Mean Scores of PCSS

and Regular U. Md. Freshman Males

| | Regularly Admitted Males - Fall, 1963* | | | PCSS Males Summer, 1964 | | |
|---|---|---|---|---|---|---|
| | N | Mean | S.D. | N | Mean | S.D. |
| ACT - English | 488 | 21.1 | 3.65 | 391 | 17.0 | 5.32 |
| ACT - Soc. Studies | 488 | 23.9 | 4.59 | 391 | 20.6 | 6.85 |
| Composite | 488 | 23.8 | 3.33 | 391 | 19.7 | 5.69 |

* These figures were obtained from the ACT Research Service Report, 1964, U. of Md., College Park, Md., American College Testing Program, Iowa City, Iowa.

Table 3

Comparison between Reading and Study Skills Test Scores of

PCSS Males and Regularly Admitted UM Freshman Norms*

| TEST | 1964 PCSS Males (N=391) Mean | S.D. | Percentile Rank |
|---|---|---|---|
| Nelson-Denny Comprehension | 41.6 | 12.4 | 16 |
| Vocabulary | 36.9 | 11.8 | 22 |
| Total | 78.8 | 22.0 | 17 |
| Rate | 298.6 | 117.6 | 40 |
| RSSL Diagnostic Spelling | 34.4 | 15.4 | 14 |
| Knower-Goyer Organization of Ideas Test | 27.2 | 7.8 | 11 |

* No norms on regular students for the Wrenn-Larsen Study Habits Inventory were available. CPI scores for the 391 PCSS males did not differ significantly from the norms for regularly admitted freshmen.

PCSS students enrolled in previous years in the same program, attendance in the RSSLab had been found to be related to academic success in the program in earlier studies (Maxwell, 1963; Knafle, 1965).

Among the variables tested, the highest contributions to the multiple correlation coefficient were made by the CPI Socialization Scale (r = .15), ACT, English (r = .07) and the Knower-Goyer Organization of Ideas Test (r = .10); (see Table 4) however, the combined contributions of these variables yielded a Multiple R of only .21. The inclusions of all 17 test variables produced a Multiple R of .31 (a correlation of this level accounts for less than 10 per cent of the variance). Since the size of the sample was large, these and other zero-order correlations obtained were statistically significant, however, they are so low as to have minimal practical value for prediction. Furthermore, in studies incorporating 17 variables, one would expect a certain proportion of these to be statistically significant through chance factors alone. However, as was stated previously, the personality variables selected for this study were those which had demonstrated validity with academic success and attendance in two previous studies; hence this study really represents a cross-validation of the earlier attempts.

Further exploration with the same population revealed that the number of sessions this same group of students had with their counselors correlated significantly with attendance in the RSSLab. (r = .55). Thus counseling sessions showed a higher relationship with work in the RSSLab. than any of the test variables combined suggesting that students who conformed to their role expectations tended to use both services. (Both participation in the RSSLab. and counseling were described to the students

Table 4

Single-order Correlation Coefficients and Multiple-R Increments between 17 Test Variables and Number of Hours Spent in the Reading and Study Skills Program

| Variable | Zero-Order Correlation | Multiple-R |
|---|---|---|
| CPI Socialization | .15** | .15 |
| ACT - English | -.07* | .17 |
| Knower-Goyer Organization | .10** | .21 |
| CPI - Achievement via Independence | .02 | .23 |
| Wrenn-Scheduling | .10** | .24 |
| Wrenn-Reading | .01 | .26 |
| N.D. Vocabulary | .07* | .27 |
| N.D. Comprehension | .03 | .28 |
| RSSL Diagnostic Spelling | .06 | .29 |
| ACT Composite | -.03 | .30 |
| CPI Achievement via Conformance | .11** | .30 |
| Nelson-Denny Rate | -.02 | .31 |
| Wrenn-Concentration | .07* | .31 |
| Nelson-Denny Total | .02 | .31 |
| CPI Responsibility | .11** | .31 |
| Wrenn-Study Habits | .08* | .31 |
| ACT Social Studies | -.04 | .31 |

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* Significant at .05 level one-tailed test.

** Significant at .01 level one-tailed test.

as voluntary, but they were told that the services had helped previous groups of students and that they were expected to use them.)

Table 5 shows the percentages of students, divided by sex and final disposition in the academic aspects of the summer session (pass or fail) giving different reasons for dropping out of the RSSLab. Between 30 and 42 per cent indicated that their reason for leaving was because they didn't feel they could spare the time from their studies. This finding is consistent with the earlier studies reported above as well as with the results of a national survey of voluntary reading programs (Ketcham, 1963) in which she reported that about 35% of the drop-outs gave lack of time as a reason for leaving reading programs. In our study from 13 to 21 per cent of the groups felt that the RSSLab. program would not help them, but very few found it too easy or too difficult. Although from 25 to 36 per cent of the groups reported having had previous reading or study skills courses, only between 4 and 13 per cent gave as their reason for dropping the fact that they had had all of this before. (Note: the women students who failed PCSS were more likely to have had previous reading programs and negative attitudes about the PCSS Reading program.)

The responses successful students and unsuccessful students gave to the question concerning the extent to which the RSSL had helped them were not significantly different. Roughly half the groups felt the program had not helped and 40-50 per cent reported that it has helped to some extent. In view of the minimal time devoted to the program by the typical student (i.e., 6.5 hours), it is interesting to note that 42 per cent of the successful males and 33 per cent of the unsuccessful males reported that the RSSLab. work had helped their grades.

Table 5

Responses to RSSL Post-Questionnaire by Sex and Final Disposition

(in Percentages)

| If you have stopped attending the Lab., what was your reason? | Male Passed (N = 176) | Male Failed (N = 137) | Female Passed (N = 52) | Female Failed (N = 38) |
|---|---|---|---|---|
| 1. Found Lab. work too difficult | 0 | 0 | 0 | 3 |
| 2. Didn't feel it would help me | 18 | 21 | 13 | 13 |
| 3. Found the work too easy | 1 | 1 | 1 | |
| 4. Have had all of this before | 4 | 4 | 1 | 13 |
| 5. Didn't feel I could spare the time from my studies | 30 | 32 | 42 | 32 |
| 6. Didn't feel I was making any progress | 4 | 10 | 4 | 5 |
| 7. Didn't feel I needed this | 9 | 4 | 6 | 5 |
| 8. Other | 18 | 12 | 6 | 8 |
| 9. No response | 16 | 16 | 27 | 21 |
| Have you had any previous experience in a reading improvement course prior to PCSS? | | | | |
| No Response | 2 | - | - | - |
| Yes | 25 | 31 | 28 | 36 |
| No | 73 | 69 | 72 | 64 |

To what extent did the RSSLab. help you in the following:

| | MALE PASS | | | | | MALE FAIL | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | None | Some | Much | Worse than Before | No Response | None | Some | Much | Worse than Before | No Response |
| Grades | 50 | 37 | 5 | 0 | 8 | 52 | 31 | 2 | 0 | 15 |
| Study Efficiency | 38 | 40 | 14 | 0 | 8 | 38 | 39 | 10 | 0 | 13 |
| Attitudes toward school | 44 | 33 | 16 | 0 | 7 | 40 | 28 | 19 | 0 | 13 |
| Skill in Reading | 48 | 34 | 12 | 0 | 6 | 42 | 31 | 13 | 0 | 14 |
| Spelling | 49 | 33 | 11 | 0 | 7 | 44 | 34 | 8 | 0 | 14 |

A further study undertook to test correlates of RSSLab. attendance in a typical group of 111 regularly admitted undergraduates who entered the program in the fall of 1967. These students were not necessarily marginal performers nor were they as low in reading and skills test scores as were the summer PCSS group. In contrast to previous analyses, here we found that personality variables were typically negatively correlated with number of hours of RSSLab. attendance with Responsibility, Self-Control, Achievement via Conformance and Tolerance being significantly though negatively related to attendance; however, the cognitive measures showed higher relationships. ACT English correlated -.44; ACT Natural Science, -.21 and ACT Comp. correlated -.34 significantly with RSSLab. attendance. The other statistically significant correlations were those for Nelson-Denny Rate ($r = -.31$) and Nelson Denny Total ($r = -.20$). Thus the student who persisted in this program tended to be lower in scholastic aptitude, and slower in reading rate and vocabulary plus comprehension skills than the student who dropped out. The student's attendance in this fall RSSLab program, like the summer one, was not related to his semester's grade-point-average.

These findings tend to differ with those reported earlier to the extent that they suggest that the more handicapped a student is, the more likely he is to persist, in contrast to the initial studies cited in which the better students who were making progress tended to remain in the program. This may reflect data gathering procedures or suggest that the kinds of students who are willing to seek help and follow through on an improvement program are changing and that the less able student is more cognizant of his problems and has the motivation to work on them. The implications are clear. The college reading specialist must consider

carefully his assumptions about college students. Data must be gathered frequently concerning changing student characteristics and attitudes so that programs can be revised to meet changing student needs.

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